Southwest Region, Area 2

Integrated Roadside Vegetation Management Plan

2009

Washington State Department of Transportation
Maintenance and Operations Division

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Summary

This plan explains the Washington State Department of Transportation's (WSDOT) policy and practice for maintenance of roadside vegetation for Maintenance Area 2 within the agency's Southwest Region. This area manages vegetation within approximately 258 miles of state highway corridor throughout Lewis County. In addition to the Interstate 5 corridor, the area maintains US 12 over White Pass to Rimrock, and State Routes (SR) 122, 505, 506, 508, and portions of SR 6 and 7. A map of the area is included as **Figure 1** on the following page.

The primary objectives in maintenance of roadside vegetation within the area are in relation to safety of the highway users, preservation of the highway infrastructure, and control of legally designated noxious weeds where they occur on the right of way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside, and being a good neighbor to the many adjoining property owners. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM) and the foundation of the program.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation in the area. Included is detailed information on policies and locations for planned routine maintenance practices, reoccurring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and prescriptions for best management practices in dealing with roadside vegetation problems and opportunities. In effect, this plan supports WSDOT's compliance with state law (RCW 17.15) by implementing the principles of Integrated Pest Management for the management of roadside vegetation. It also supports WSDOT's long-range goals for the management of roadsides to:

- Encourage naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce maintenance needs and herbicide use over time

This plan is organized around the major categories of roadside vegetation maintenance work. The major categories include: Zone 1 (or pavement edge maintenance), Routine Mowing, Noxious Weed Control, Nuisance Weed Control, Tree and Brush Control, and Special Maintenance Areas.

The management of roadside vegetation is a dynamic process and it is intended that this plan be continuously adapted over time based on input from a variety of sources. An integral component of the process is a database for recording IVM treatments for specific vegetation controls and locations, and to record information on follow-up evaluation on these treatments. Annual area meetings will be held to discuss what is learned each year and refine the plan over time.

WSDOT is also requesting that local public and private entities with an interest in weed control and roadside vegetation management provide input on the plan and cooperate in efforts where appropriate. Copies of the draft plan are available online: www.wsdot.wa.gov/maintenance/vegetation/mgmt_plans.htm, hard copies can also be provided upon request. Please contact Paul Simonsen or Ray Willard at the numbers listed below for questions or comments:

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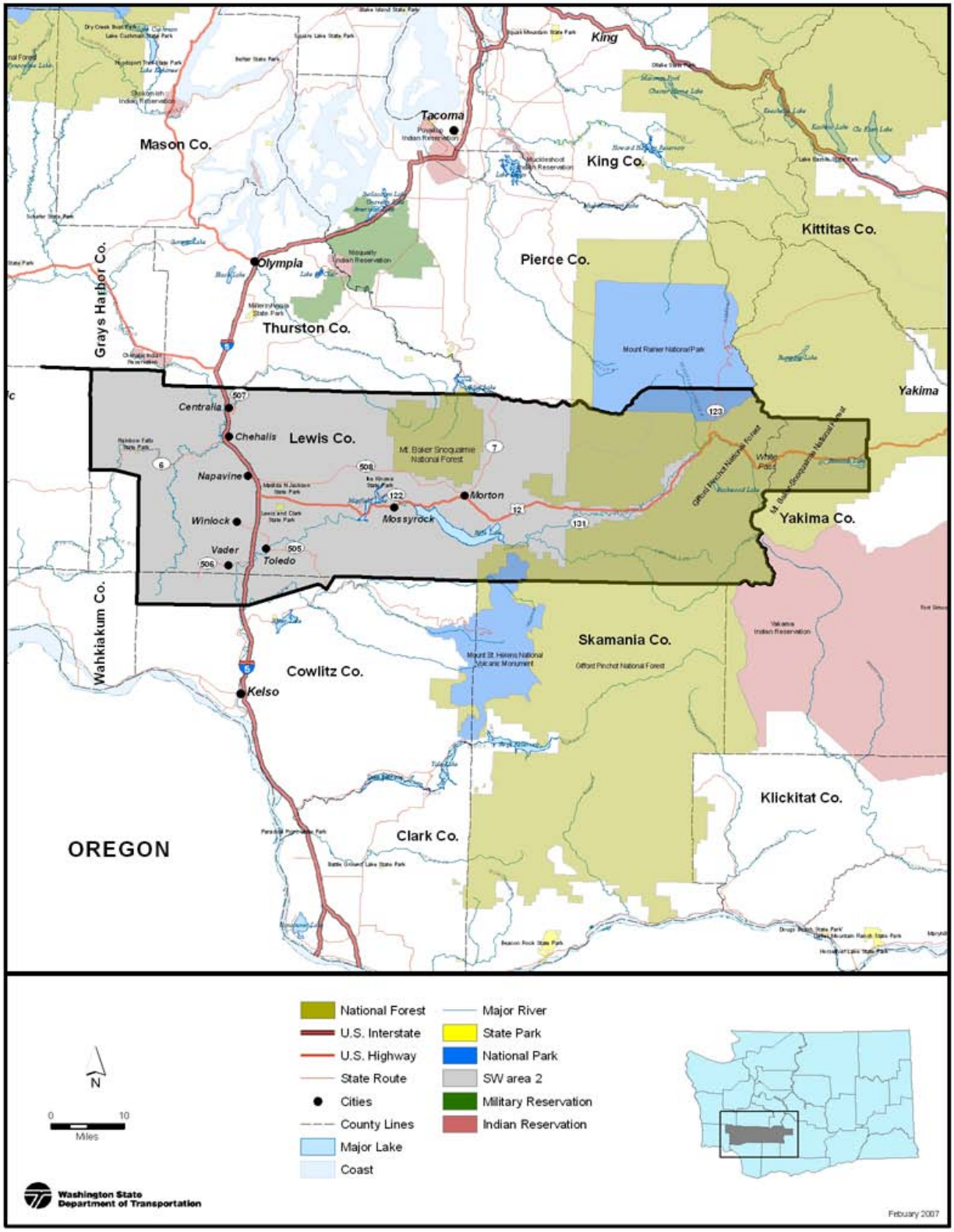


Southwest Region, Area 2 Map
Figure 1

Roadside Management Considerations

The primary objectives for maintenance of roadside vegetation are to provide for safe highway operation and to comply with legal regulations for control of noxious weeds and protection of the environment. Overall WSDOT maintenance policy and procedures for roadside management are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002) *www.wsdot.wa.gov/Publications/Manuals/M51-01.htm*

Visual Quality
It is also important to maintain appropriate visual standards in the appearance of the roadside. All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread "brown-out" from herbicides or shattered limbs from side trimming. Roadsides should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996) *www.wsdot.wa.gov/Publications/Manuals/M25-31.htm*

Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all management zones occur along all state highways. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. Roadside vegetation management zones are illustrated in **Figure 2** below and defined as follows:

> **Zone 1** – A vegetation free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, and pavement and guardrail preservation needs. Zone 1 is typically maintained with an annual application of herbicides.
>
> **Zone 2** – The operational zone extends from the edge of Zone 1 or the pavement edge (if Zone 1 is not present) to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions. Zone 2 is typically maintained by mowing a single pass adjacent to the pavement and through selective removal of unwanted trees and brush beyond the mowing strip.
>
> **Zone 3** – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.

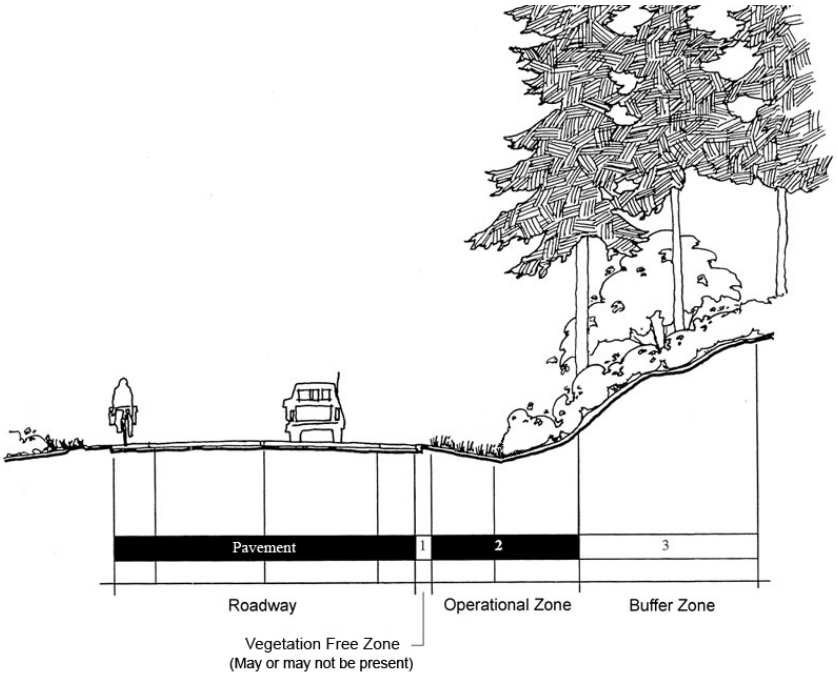
Roadside Maintenance Activities
All roadside maintenance activities are to be planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM). In every case it is essential that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness. However, in some cases maintenance activities are conducted routinely on an annual basis, such as maintenance of Zone 1 and routine mowing where required.

> **Routine Maintenance Activities** – When vegetation maintenance activities are required to keep the area of roadside being treated in an annually controlled condition, activities are considered routine. This is more critical for areas of vegetated roadside near the travel lanes, edge of pavement, and around guardrails. This plan provides prescriptions and gives locations for routine maintenance activities including maintenance of Zone 1 and annual mowing.

Integrated Vegetation Management Activities – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific type or types of unwanted plants. By carefully planning and carrying out these target specific activities it is possible over time to establish desirable vegetation, which will prevent the re-infestation of unwanted plants and reduce the need for maintenance over time. The process for determining and carrying out IVM actions is illustrated in **Figure 3** on the following page. This plan provides information, locations, and gives prescriptions for selective control of weeds and other unwanted vegetation and the promotion and establishment of desirable vegetation. Further information and guidance on the application of IVM is available in the document Integrated Vegetation Management for Roadsides (WSDOT, July 1997) *www.wsdot.wa.gov/maintenance/pdf/IVM.pdf*

Special Maintenance Areas – In some locations there are unique situations that require special consideration in determining appropriate vegetation maintenance actions. Examples of these are: environmentally sensitive areas, areas with special neighbor concerns, areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross tribal or federal lands. This plan provides information and guidance on the locations and unique requirements or restrictions on maintenance activities in all of these situations throughout the area.

Herbicide Use – WSDOT has conducted independent research on herbicide risk from toxicity and environmental fate, based specifically on agency application methods and use rates. Findings from this research have been used to establish an approved palette of herbicides and application limits for state highways. A complete summary of herbicides approved for use on WSDOT rights of way is included in **Appendix B**.

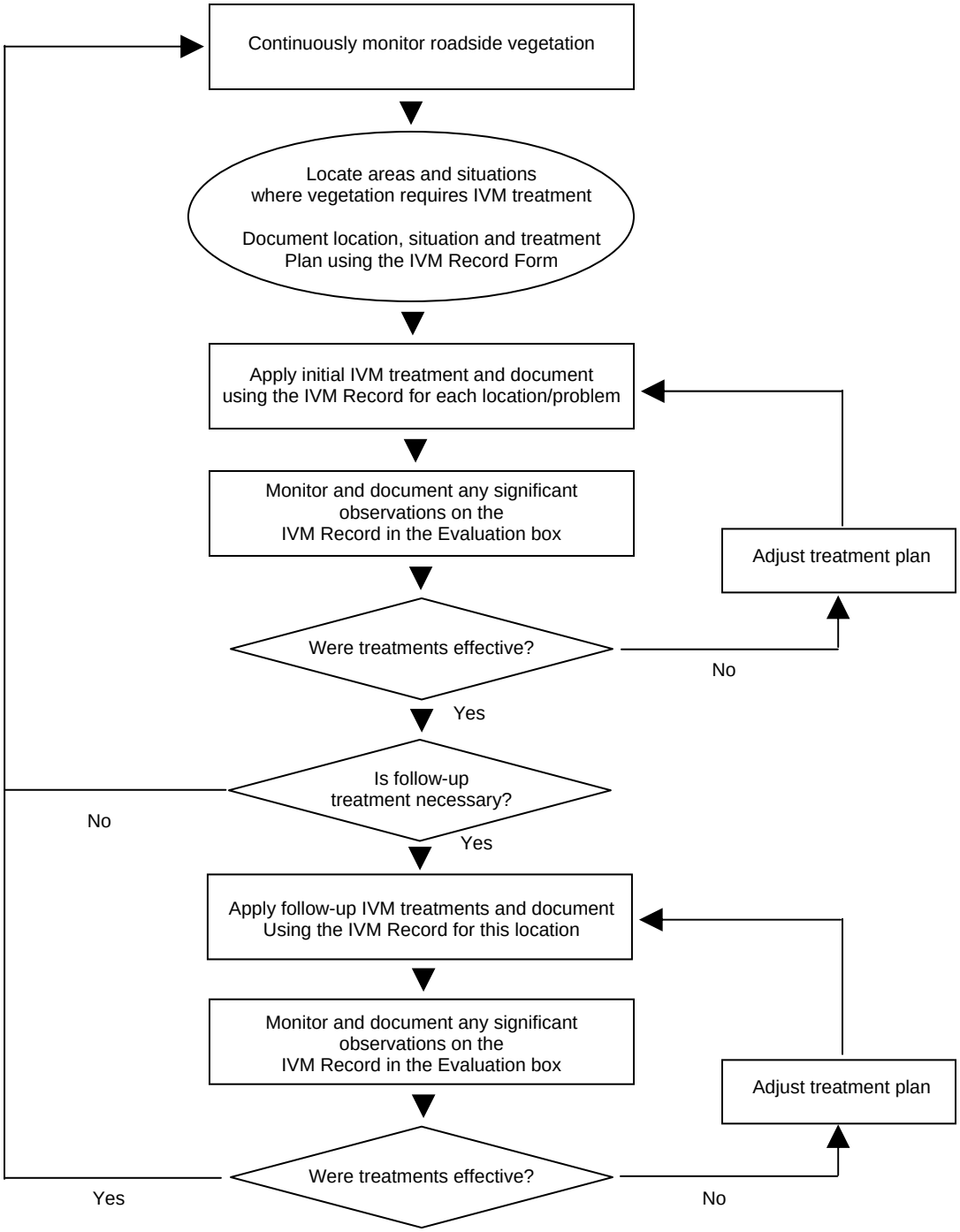


Vegetation Free Zone
Gravel Shoulder
Maintained in designated locations using mechanical and chemical methods for sight distance, to improve drainage, and to preserve pavement and roadside hardware.

Operational Zone
Low Vegetation
Maintained with mowing and IVM treatments for sight distance, safe errant vehicle recovery, and weed control.

Buffer Zone
Native/ Natural Vegetation
Where adequate right of way exists, maintained using IVM to encourage desirable vegetation in self-sustaining plant communities.

Typical Roadside Vegetation Management Zones
Figure 2



The IVM Decision-Making Process
Figure 3

Area IVM Goals

The purpose of this section is to identify the highest priority roadside vegetation management needs in SW Region, Area 2. Priorities are listed by specific activities and locations in relation to the three major groups for roadside vegetation maintenance performance: Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control. This section is intended to supplement the information in the following section, ***Southwest Region, Area 2 – Roadside Vegetation Management Plan*** which details the guidelines and methods for accomplishing the work of roadside vegetation management.

Control of Vegetative Obstructions
Since the work of this group of maintenance activities relates to the safety and operation of the highway, these items are considered first priority in terms of the overall roadside maintenance priority. Activities and locations of greatest need include:

-

Noxious Weed Control
Noxious weeds are those species legally designated by state and county regulations for required control by all property owners. Because laws are enforced with fines and/or control work and billing of property owners by county administration, work under this group is considered second priority after critical safety related locations have been addressed. Species and locations are negotiated with the county weed boards on an annual basis and for 2009 include:

-

Nuisance Vegetation Control
Nuisance vegetation control includes control/management of weed species that are recommended but not mandated, by state and county law. It also includes work such as mowing of grass and weeds in areas where a more neatly maintained appearance is desired such as in gateway interchanges or highways in urbanized areas. Because nuisance vegetation control is lower priority after safety related and legally mandated activities, the location and work actions listed below may be postponed depending on availability of resources.

- Treat nuisance weeds and promote existing desirable grasses on shoulders where Zone 1 has been eliminated throughout the area.
- Control Scotch broom along SR-12 at the eastern edge of infestation, approximately MP 130 to 135.
- Eradicate knotweed infestations along I-5 at MP 82.5 NB, 78.46 SB, and 52.65 NB
- Eradicate knotweed infestations along SR-7 at MP 1, 4, 9, 10, 11, 12, and 15

1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when regular periodic treatment is required to keep vegetative growth from interfering with highway operational and maintenance objectives. Typical routine maintenance activities are maintenance of Zone 1 and certain types of mowing and trimming.

1.1. Routine Shoulder Maintenance (Zone 1)

WSDOT is currently re-evaluating its policy for maintenance of Zone 1. Past policy and practice will be refined over the coming years in response to findings from study of long-term benefit/cost resulting from alternative treatments. For the 2006 growing season, vegetation at the edge of pavement will be managed as follows on roadsides in this maintenance area:

1.1.1. Guidelines

- Zone 1 is maintained with the annual application of herbicides only under guardrail installations and other select areas where it is impractical to routinely mow shoulders.
- Where maintained, Zone 1 is 3' band width or less.

1.1.2 Methods

- Herbicides being applied to Zone 1 include a non-selective, post emergent product (glyphosate) mixed with a non-selective, pre-emergent products (sulfometuron-methyl and chlorsufuron, trade name Landmark).
- Zone 1 treatments will be applied in April/May, depending on rainfall patterns and annual plant growth.
- Pavement edges without Zone 1 will be monitored for surface drainage problems resulting from sod build-up and will be graded in locations as necessary to allow for hydraulic flow of storm water off the roadway surface.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 1 Maintenance**

1.1.3 Locations

- Areas where Zone 1 is maintained are shown in **Appendix C, Zone 1 Map**

1.2. Routine Mowing/Trimming (Zone 2)

1.2.1. Guidelines

- Routine annual mowing of roadside grass stands occurs along all non-Zone 1 shoulders throughout the area in at least one pass, and at least once per year immediately adjacent to the edge of pavement.
- When the intention is to mow roadsides only once during the growing season, mowing will begin in summer when the majority of spring growth has taken place and grasses are beginning to set seed, and continue as necessary through the remainder of the summer.
- For roadsides that are intended to be mowed more than once during the growing season, an initial pass will be made in mid to late spring followed by another cycle beginning once the majority of spring growth has taken place and grasses are beginning to set seed.
- Trimming is distinguished from mowing because it consists of selectively cutting back encroaching limbs and/or hedging shrubs or woody

vegetation. Trimming occurs annually as well, but only in select locations as needed to preserve the safe operation of the highway.

- In designated areas on Interstate 5 and SR-12, mowing widths extend beyond one mower pass. Sections of highway designated for multiple pass mowing will typically be mowed once pass by mid to late spring and then mowed out completely beginning in summer once the majority of spring growth has taken place and grasses are beginning to set seed.
- Additional annual mowing width or frequency may also be conducted as needed for select locations on secondary highways to preserve site distance at curves, intersections and any other highway entry points.
- In focus areas such as interchanges and areas adjacent to safety rest areas mowing patterns and frequencies are adjusted to local situations as described in **Section 3** and **Appendix D, Routine Mowing Plan**.
- In all areas outside designated routine mowing limits, mowing is only used as part of IVM treatments for weed and brush control as described below in **Section 2**.

1.2.2. Methods

- On I-5 and lower SR-12, routine annual mowing areas are designated as either single pass or multiple pass.
- Single pass mowing consists of one pass up to the maximum width of mowing equipment (25' max.) but may be as narrow as 6' depending on mowing equipment and the presence of existing visual lines such as ditches. When ditch lines are present, single mowing passes shall extend only to the bottom of the ditch line whenever possible.
- In areas designated as multiple pass, roadsides are mowed out from edge of pavement to the right of way line, the edge of shrub or tree lines, or across the entire median widths depending on the location.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 2 Maintenance**

1.2.3. Locations

- **Appendix D, Routine Mowing Map** shows locations where routine annual mowing occurs as one pass and as multiple passes. **Appendix D, SW Region, Area 2 Routine Mowing Plan** describes mowing priorities, timing and limits on the I-5 and SR-12 corridors.

1.3. Hazard Tree Removal

1.3.1. Guidelines

- Hazard tree removal is considered a routine maintenance activity because maintenance is constantly on the look out for any trees that pose an imminent threat to the highway or traffic, and whenever hazard trees are identified they are routinely removed as soon as possible.
- Hazard trees may be dead, leaning, or structurally unsound. Best horticultural judgment will be used in evaluating trees that appear diseased or structurally unsound or are believed to pose a long-term threat to determine the best course of action.
- Another consideration in removal of trees is the contribution to shading in areas prone to frost and ice formation on the highway surface. When such areas are identified, the surrounding canopy may be thinned through selective removal of large trees on the right of way.

1.3.2. Methods

- Hazard trees are removed in such a manner to minimize damage and impact to the highway structure and other healthy trees and under-story vegetation.
- When possible felled trees may be left on site.

2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process diagrammed on Page 5 in **Figure 3**. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve long term roadside maintenance goals and objectives in an environmentally and economically sound manner. The goal in utilizing the IVM approach is the effective control of unwanted vegetation and the establishment of stable, low maintenance native or naturalized plant communities on the roadside that are compatible with:

- Highway maintenance and safety objectives
- Preservation of environmental quality
- Weed control requirements
- The concern's of WSDOT's customers and neighbors.

Long term, the use of the IVM approach can reduce the intensity and cost of maintenance, as well as minimizing the need to use herbicides.

2.1. Integrated Vegetation Management Planning and Tracking Database

2.1.1. Guidelines

- An Integrated Vegetation Management Records database is available for use. This database is accessed through the same WSDOT network application as the Pesticide Application Records database.
- Any activities focused on treatment of a specific location and species infestation, or focused on treatment of any types of unwanted vegetation throughout the area will be documented with an initial IVM record outlining the long-term treatment plan. These same records will be updated over time whenever planned treatments are carried out, or when observations are made as to the success or failure of past treatments.
- Treatment records may be printed out and inserted into **Appendix G** for reference.

2.2. Noxious Weed Control

2.2.1. Guidelines

- Noxious weed control is a high priority for WSDOT because of state law requiring control of designated species. Transportation rights of way are high priority locations for control of noxious weed species within the state because they cross and link so many adjacent properties and land uses.
- Whenever possible designated noxious weed species and infestations locations will be documented and treated following plans as defined by IVM record forms in the database.
- Washington State Law classifies noxious weeds in three classes: A, B, and C. All Class A species are required control wherever they occur statewide. The law allows for individual county weed boards to designate individual Class B and C weeds for control within the counties depending on how widespread and potentially harmful they are at the local level.
- For the purposes of this plan, noxious weeds are defined as species within any class designated or prioritized by the weed boards for control on state highway rights of way within the counties.

- For SW Region, Area 2 the following weeds designated for control are known to exist on state highway rights of way in Lewis County. It is assumed that the same list will be applied to the short sections of highway within the area extending into Cowlitz and Yakima Counties.

  Class A
  Class A noxious weeds are non-native species with a limited distribution in the state. No Class A weeds are known to exist on WSDOT rights of way in this area.

  Class B
  Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. The following designated species are known to exist on WSDOT right of way:

Common Name/Botanical Name
Knotweed sp./Polygonum sp.
Ragwort tansy/Senecio jacobaea
Knapweed sp./centauria sp.
Scotch broom/Cytisus scoparious (only eastern SR12 and 123)
Dalmation toadflax/Linaria dalmatica ssp. dalmatica
Rush skeletonweed/Chondrilla juncea
Mouseear hawkweed/Hieracium pilosella
Yellow hawkweed/Hieracium caespitosum
Common fennel/*Foeniculum vulgare*
Poison hemlock/Conium maculatum
Butterfly bush/Buddleia davidii

  Class C
  Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. The County Noxious Weed Control Boards also have the power to designate Class C species for control. There are no designated Class C noxious weeds known to exist on state right of way in SW Region, Area 2.

- Pictures of designated control noxious weeds are included for reference in **Appendix E**.

2.2.2. Methods

- Because noxious weed species are often difficult to control, herbicides treatments are often the primary, initial means of control.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
- In conjunction with weed control treatments, a variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. The IVM Record and database are essential to the execution and success of these control measures.
- For recommended treatments specific to noxious weed species, see **Appendix A, IVM Prescriptions, Noxious Weed Control**

2.2.3. Locations

- **Appendix E, Noxious Weed Location Map** shows locations where key reoccurring infestations of noxious species have been identified in SW Region, Area 2. This list of locations will be added to and updated annually.

2.3. Nuisance Weed Control

2.3.1. Guidelines

- For the purposes of this plan, nuisance weed species are defined as species listed as Class B and C weeds on the state noxious weed lists, but not required for control within individual counties.
- Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, and enhances visual quality.
- Nuisance weed species will be controlled when time and budget allows. At times control may be accomplished incidental to noxious weed control when species are present in the same area.
- Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right of way or to un-infested neighboring properties.
- Species designated as nuisance weeds in SW Region, Area 2 that are known to exist on the highway right of way include:

Common Name/Botanical Name
St. Johnswort/Hypericum perforatum
Sulfur cinquefoil/Potentilla recta
Common tansy/Tanacetum vulgare
Bull thistle/Cirsium vulgare
Canada thistle/Cirsium arvense
Scotch broom/Cytisus scoparius
Wild carrot/Daucus carota
Common Mullein/Verbascum thapsus
Himalayan blackberry/Rubus discolor

2.3.2. Methods

- Control measures for nuisance weed are dependent on the type of plant.
- Woody species such as Scotch broom and Himalayan blackberry are most effectively treated with a combination of cutting, herbicide treatments and encouragement of native vegetation.
- Perennial species such as Canada thistle are most effective controlled by succeeding years of properly timed herbicide applications.
- Annual or biennial species such as bull thistle and common tansy may also be effectively controlled with herbicide applications when plants are in the rosette stage in spring, or by hand pulling prior to seed set.
- See **Appendix A, IVM Prescriptions, Nuisance Weed Control**.

2.4. Tree and Brush Control

2.4.1. Guidelines

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.
- Native large shrub and small tree species should be allowed to grow and mature in Zone 2 and selectively trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Large coniferous or hardwood deciduous tree species such as Douglas fir, bigleaf maple, alder, or cottonwood left to grow in Zone 2 and in some cases parts of Zone 3, can reach substantial size over a relatively short period of time and should be removed when young.
- Fast-growing hardwood pioneer species such as big leaf maple, alder, or cottonwood, present a risk from falling on the road when mature. Wherever these trees emerge within 70' of the pavement on highway right of way, they should be removed within the first two to three years of growth or as soon as possible.
- Any tree with a trunk diameter of 4" or greater is considered a hazard for errant vehicles in Zone 2 and should be removed. This zone is also referred to as the Design Clear Zone and is typically maintained to a width of 30' from the traffic lane edge. Actual minimum widths are determined by roadway alignment, traffic speed and volume, and cross-section of the roadside, as specified in the WSDOT Design Manual, Chapter 700.04. *www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/DesignManual.pdf*

2.4.2. Methods

- Removal of undesirable tree and brush species is typically accomplished by hand cutting, hand pulling, properly timed selective mowing, properly timed herbicide applications, or combinations thereof.
- In some locations it is most effective to mow back the majority of the existing vegetation and then selectively treat undesirable re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up around and form a competitive cover.
- In some cases when tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the roadside in the form of mulch for soil enhancement and weed prevention.
- Timing of activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of undesirable plants may be used to reduce or eliminate grow back.
- Chemical control methods will not be used on conifers greater than 2 feet in height and/or large dense patches of young trees, to avoid unnecessary negative visual impacts from "brown-out".
- Chemical control methods will not be used on deciduous plants until after the first of September, except for as stump treatments in conjunction with mechanical cutting to eliminate grow-back.
- When possible, safe and practical, seedling of desirable trees may be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be

signed to allow private citizens to collect seedlings for use as transplants.

- See **Appendix A, IVM Prescriptions, Tree and Brush Control**.

3. SPECIAL MAINTENANCE AREAS

Special Maintenance Areas are any locations with unique maintenance requirements or special considerations for roadside management. These areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state park land, wellheads, environmentally sensitive areas, school zones and roadsides adjacent to individual properties with current or annual no-spray agreements.

3.1. Interchanges/Intersections

3.1.1. Guidelines

- Interchange areas are sometimes developed to a greater level than general roadside areas to include storm water management facilities, pedestrian areas, and permanent vegetation designed for screening, and visual enhancements for community entrances.

3.1.2. Locations

- Interchanges and intersections with unique maintenance considerations are listed in **Appendix F**, along with notes describing practices for each location.

3.2. City Maintenance Areas

3.2.1. Guidelines

- In most cases where non-limited access highways exist within city limits, the roadside (all area outside the highway pavement and drainage systems) are maintained by the local city government.

3.2.2. Locations

- Areas where roadsides are maintenance by cities are listed by route and begin and end milepost in **Appendix F**.

3.3. Herbicide Sensitive Areas

3.3.1. Guidelines

- In some situations herbicide use is limited or restricted because of legal requirements, neighbor concerns, or WSDOT imposed environmental safety precautions.
- In these locations, vegetation must be managed without the use of herbicides or with only a limited palette of herbicide types.

3.3.2. Locations

- Herbicide sensitive areas and reason/type of limitations on herbicide use are listed by route and begin and end milepost in **Appendix F**.

3.4. Adopt-a-Highway and Neighbor Maintained Agreements

3.4.1. Guidelines

- In some locations WSDOT has signed agreements with private citizens or neighboring businesses for maintenance of roadside vegetation.

3.4.2. Locations

- Currently there are no locations with neighbor maintained agreements in SW Region, Area 2.

3.5. Storm Water Management Facilities

3.5.1. Guidelines

- Storm water management facilities include bio-filtration swales, retention ponds and infiltration ponds.
- Storm water management facilities are managed for noxious and nuisance weeds, and hazard trees following the same guidelines mentioned in previous sections. The primary objectives with regard vegetation management within these facilities are maintenance of the functionality in terms of the designed volume of retention and water flow, and the maintenance of the surrounding fence
- Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed.
- Inlets and outfalls should be kept clear of vegetation and debris.

3.5.2. Locations

- Stormwater management facilities are listed by route and milepost in **Appendix F**.

3.6. Wetland Mitigation Sites

3.6.1. Guidelines

- Wetland mitigation sites are carefully monitored through WSDOT's Environmental Services Office for up to 10 years following their creation to ensure compliance with environmental regulation.
- In most cases vegetation in these sites is planted and established through the construction and long-term monitoring process so that once they are turned over to maintenance, actions are not required unless noxious weeds or hazardous trees become an issue.
- In cases where mitigation sites have fulfilled their original permit requirements and have been turned back to maintenance, sites should be inspected on an annual basis to determine if any repairs or weed control is necessary.

3.6.2. Locations

- All wetland mitigation sites under maintenance responsibility within SW Region, Area 2 are listed by the nearest route and milepost in **Appendix F**.

3.7. IVM Treatment Sites

3.7.1. Guidelines

- As discussed in **Section 2.1**, selected sites are designated for planning, carrying out and monitoring multi-year IVM treatments for control of weeds or other unwanted vegetation.
- IVM treatment sites are documented with an initial record in the IVM Treatment Database, to identify the problem to be addressed, location(s), management goals, and integrated treatment plan.
- Records are updated each time a treatment is made, results observed, or when the treatment plan is modified based on observations.

3.7.2. Locations

- All designated IVM treatment sites within SW Region, Area 2 are listed by the route and milepost in **Appendix F**. This list is updated annually as new sites may be added and successfully treated sites removed.

Zone 1 Maintenance - Bareground Treatment

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Gravel shoulder	Gravel shoulder	Gravel shoulder	Gravel shoulder
MANAGEMENT GOALS:	Vegetation free	Vegetation free	Vegetation free	Vegetation free
METHOD:	Annual herbicide application	Annual herbicide application	Annual herbicide application	Annual herbicide application
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles
MATERIALS:	Payload 8 oz./acre + Oust 3 oz./acre	Milestone VM 7 oz./acre + Round Up Pro 64 oz./acre	Round Up Pro 64-128 oz./acre	Landmark 4.5-7 oz./acre + Razor Pro 64 oz./acre
TIMING:	Early Spring or Fall	Early Spring	Early to mid June	Early Spring
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 1 Maintenance - Bareground Treatment

OPTION 5

TREATMENT TYPE:	Around senstive locations			
MANAGEMENT GOALS:	Vegetation free			
METHOD:	Annual herbicide application			
EQUIPMENT:	Spray truck w/ banned width nozzles			
MATERIALS:	Aquanet at 64 oz./acre + LI700 at 32 to 64 oz./100 gal.			
TIMING:	Early Spring or Fall			
IVM FOLLOW-UP:	Evaluate control			
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 2 Maintenance - Tree and Brush

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Confir control	Deciduous tree and brush	Deciduous tree and brush	Deciduous tree and brush
MANAGEMENT GOALS:	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction
METHOD:	Herbicide treatment	Herbicide treatment	Herbicide treatment	Stump Treatment
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Dobber or Spray bottle
MATERIALS:	Garlon 3A 128 oz. and Escort 1 oz.	Milestone VM 5-7 oz. plus Garlon 3A 64 oz.	Krenite S	Garlon 3A 50/50 with water or forestry oil. Garlon 4 50/50 with water or forestry oil.
TIMING:	Late summer, early fall	Late summer, early fall	Late summer before leaf turn	Anytime
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Avoid brown out by spraying late in the season and spray only to appropriate height.			

Noxious Weed Control - Japanese Knotweed

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Stem injection		
ACTION THRESHOLD:	Whever present (dependent on available resources)	Smaller infestations and or near water		
MANAGEMENT GOALS:	Eradication and control only if your county requires.	Eradication and control only if your county requires.		
METHOD:	Spot treatment w/ heribicde	Stem injection w/ herbicide		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Injection equipment		
MATERIALS:	Habitat/MSO 0.5-1 lbs. per acre	Concentrated Roundup at 2%		
TIMING:	Early to late bloom between July and August	Once seasonal growth has occurred		
IVM FOLLOW-UP:	Reapply if necessary following year. Restore site w/ native vegetation.	Re-treat green stems as necessary. Restore site w/ native vegetation		
REMARKS:				

Noxious Weed Control - Tansy Ragwort

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Manual	Bio-Control
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
MANAGEMENT GOALS:	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.
METHOD:	Spot treatment w/herbicide	Spot treatment w/herbicide	Hand removal. May include cut stem.	
EQUIPMENT:	Tank spayer where possible, backpack spayer where necessary.	Tank spayer where possible, backpack spayer where necessary.		
MATERIALS:	Escort 1/2 to 1 oz./acre	Milestone VM 5 to 7 oz./acre	None required. Round -up in spray bottle for cut stem.	Flea beetle/Cinebar Moth
TIMING:	Spray by May	Spray by June	Pull by June	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize to reduce weed competition.	Reapply as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Noxious Weed Control - Knapweed sp.

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Manual	
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.		
MANAGEMENT GOALS:	Eradication and control if required by your county.	Eradication and control if required by your county.	Eradication and control if required by your county.	
METHOD:	Spot treatment w/ herbicide	Spot treatment w/ herbicide is most affective.	Hand removal. Roots must also be removed. Remove plant from site.	
EQUIPMENT:	Tank sprayer where possible, backpack sprayer where necessary	Tank sprayer where possible, backpack sprayer where necessary.	Labor, transporation	
MATERIALS:	Milestone 5 to 7 oz./acre	Transline .66 to 1.33 pints/acre	none required	
TIMING:	Early budding stages	Early budding stages	Early budding stages	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize to reduce weed competition.	Reapply as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Noxious Weed Control - Scotch broom

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Manual application	Mechanical application	Bio-Control
ACTION THRESHOLD:	Whever new infestations occur (dependant on available resources)	Wherever present (dependant on available resources)	When resources are available.	When ever present
MANAGEMENT GOALS:	Minimize populations and prevent further spread of weed.	Minimize populations and prevent further spread of weeds.	Minimize populations and prevent further spread of nuisance weeds.	Minimize spread
METHOD:	Foliar treatment w/herbicide.	Hand pull	Mechanical control with follow-up cut stump treatment.	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Weed wrench option, brown brush monitor	Mower, backpack sprayer where necessary.	Truck
MATERIALS:	Garlon 3A at 2 quartz with Escort 2 oz. with Phase per acre	Garlon 4 mix 2 to 1 with crop oil	Garlon 3A at 1 to 1 with water or surfactant	Exapionfuscirostre
TIMING:	Apply during actively growing season	Anytime	After mowing	release when actively growing.
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.	Evaluate, redeploy if necessary
REMARKS:				

Noxious Weed Control - Dalmation Toadflax

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
MANAGEMENT GOALS:	Eradication and control only if your county requires.	Eradication and control only if your county requires.	Eradication and control only if your county requires.	
METHOD:	Spot treatment w/ heribicde	Spot treatment w/ heribicde	Spot treatment w/ heribicde	
EQUIPMENT:	Backpack sprayer or spray bottle, pickup, etc.	Backpack sprayer or spray bottle, pickup, etc.	Backpack sprayer or spray bottle, pickup, etc.	
MATERIALS:	Telar at label rates w/ silicon based surfactant at 2 to 3 oz./acre	Escort 1 to 2 oz./acre	Plateau 12 oz./acre with methylated seed oil	
TIMING:	When in bloom between June and August	When in bloom between June and August	Apply in the fall	
IVM FOLLOW-UP:	Reaply as necessary. Seed and fertlize to reduce weed competition.	Reaply as necessary. Seed and fertlize to reduce weed competition.	Reaply as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Noxious Weed Control - Rush Skeletonweed

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	Whever present (dependent on available resources)	Whever present (dependent on available resources)		
MANAGEMENT GOALS:	Eradication of noxious weed	Eradication of noxious weed		
METHOD:	Broadcast spray	Broadcast spray		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.		
MATERIALS:	Milestone VM 5 to 7 oz./acre	Habitat 3 to 4 oz./acre		
TIMING:	Early growth stage	Early growth stage		
IVM FOLLOW-UP:	Reapply if necessary following year. Restore site w/ native vegetation.	Reapply if necessary following year. Restore site w/ native vegetation.		
REMARKS:				

Noxious Weed Control - Hawkweed sp.

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	Apply while actively growing	Apply while actively growing		
MANAGEMENT GOALS:	Eradication of listed noxious weeds.	Eradication of listed noxious weeds.		
METHOD:	Power sprayer	Power sprayer		
EQUIPMENT:	Spray tank	Spray tank		
MATERIALS:	Milestone VM 4 to 6 oz./acre	Transline .66 to 1 pint/acre		
TIMING:	Bolting stage	Bolting stage		
IVM FOLLOW-UP:	Multiple treatment as needed	Multiple treatment as needed		
REMARKS:				

Noxious Weed Control - Butterfly Bush

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	
ACTION THRESHOLD:	Whever present	Whever present	Whever present	
MANAGEMENT GOALS:	Eradication	Eradication	Eradication	
METHOD:	Cut Stump	Broadcast spray	Broadcast spray	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Power Spray	Power Spray	
MATERIALS:	Garlon 4 50/50 with MSO	Garlon 3A 64 oz./acre	Crossbow 64 oz./acre	
TIMING:	Late season	Early season to Mid season	Early season to Mid season	
IVM FOLLOW-UP:	Re-cut/treat as necessary.	Reapply if needed	Reapply if needed	
REMARKS:				

Noxious Weed Control - Poison Hemlock

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Hand removal	Chemical application	Chemical application
ACTION THRESHOLD:	When plants appear	When plants appear	When plants appear	When plants appear
MANAGEMENT GOALS:	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.
METHOD:	Spot treatment w/ herbicide	Hand removal. Remove plant from site	Spot treatment w/ herbicide	Spot treatment w/ herbicide
EQUIPMENT:	Backpack sprayer, pickup etc.	Labor, transporation	Backpack sprayer, pickup etc.	Backpack sprayer, pickup etc.
MATERIALS:	Telar 1 to 3 oz.	None required	Excort 1 to 2 oz./Phase	1 -2 percent per acre Glyphosate
TIMING:	Spray by April	Pull by Arpil	Apply to actively growing plan	Treat at bud to full bloom stage of growth
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	Repply as necessary	Reapply as necessary
REMARKS:	Use a nonionic surfactant or silicone surfactant			

Nuisance Weed Control - St. Johnswort

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	When resources are available.	When resources are available.		
MANAGEMENT GOALS:	Minimize populations and prevent further spread of nuisance weeds.	Minimize populations and prevent further spread of nuisance weeds.		
METHOD:	Foliar treatment, mechanical.	Foliar treatment, mechanical.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.		
MATERIALS:	Milestone VM 5 to 7 oz./acres	1-2 oz./acre Escort plus Phase		
TIMING:	Apply after weeds emerge	Apply after weeds emerge		
IVM FOLLOW-UP:	Reapply as necessary	Reapply as necessary		
REMARKS:	Repeat application as needed			

Nuisance Weed Control - Sulfur Cinquefoil

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	
ACTION THRESHOLD:	When resources are available.	When resources are available.	When resources are available.	
MANAGEMENT GOALS:	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	Minimize populations,prevent further spread of nuisance weeds.	
METHOD:	Foliar treatment, mechanical.	Foliar treatment	Foliar treatment	
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	Truck mounted sprayer where possible, backpack spayer where necessary, mower.	
MATERIALS:	Crossbow 128 oz./acre	Milestone 4 to 7 VM oz./arce	Escort 1 to 2 oz./acre	
TIMING:	Spring	Spring	Spring	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply if necessory	Reapply if necessory	
REMARKS:				

Nuisance Weed Control - Common Tansy

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Whever present	Whever present	Whever present	
ACTION THRESHOLD:	Whever present	Whever present	Whever present	
MANAGEMENT GOALS:	Eradication	Eradiction	Eradiction	
METHOD:	Foliar treatment. Cut stem treatment.	Foliar treatment	Foliar treatment	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Telar 1 to 3 oz./acre	Escort 1 to 2 oz./acre	Milestone VM 3 to 5 oz./acre	
TIMING:	Anytime	Apply to actively growing vegetation in the Spring	Apply to actively growing vegetation in the Spring	
IVM FOLLOW-UP:	Re-cut/treat as necessary.	Retreat as necessary	Retreat as necessary	
REMARKS:				

Nuisance Weed Control - Bull Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 3 to 5 oz. per acre	Telar XP 1-3 oz./acre	Urophora Stylata
TIMING:	Apply from rosette to bud stage to actively growing thistle	Apply to young actively growing weeds.	Apply to young actively growing weeds.	Early growing stage
IVM FOLLOW-UP:	Repeat annually as necessary	Repeat annually as necessary	Repeat annually as necessary	Reapply as necessary
REMARKS:				

Nuisance Weed Control - Canada Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	Wherever present
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 5-7 oz./acre	Telar XP 1-3 oz./acre	Rhinocyllus Conicus
TIMING:	Apply from rosette to bud stage to actively growing thistle	Pre bud stage	Apply to the bud at bloom stage	Early growing season
IVM FOLLOW-UP:	Repeat annually as necessary	Apply before first frost	Apply before first frost	Redeploy as needed
REMARKS:	For most effective control, apply as a broadcast treatment to the entire infested area.			

Nuisance Weed Control - Wild Carrot

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	Wherever present	Wherever present		
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.		
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.		
MATERIALS:	Telar 1oz./acre	Crossbow 4 quarts/acre		
TIMING:	Apply from rosette to bud stage to actively growing thistle	Apply from rosette to bud stage to actively growing thistle		
IVM FOLLOW-UP:	Repeat annually as necessary	Repeat annually as necessary		
REMARKS:				

Nuisance Weed Control - Common Mullein

	OPTION 1			
TREATMENT TYPE:	Chemical application			
ACTION THRESHOLD:	Whe resources are available.			
MANAGEMENT GOALS:	Minimize population and prevent further spread of nuisance weeds.			
METHOD:	Foliar treatment, mechanical			
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary, mower.			
MATERIALS:	7oz./acre Milestone VM			
TIMING:	Spring			
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize or plant to restore native plant community.			
REMARKS:				

Nuisance Weed Control - Himalayan Blackberry

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Mechanical application		
ACTION THRESHOLD:	Whever present (dependant on resources)	When resources are available.		
MANAGEMENT GOALS:	Control and eradicate if county requires.	Minimize populations and prevent further spead of weed.		
METHOD:	Foliar treatment w/ herbicide	Mechanical control with follow-up cut stump treatment.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary.	Mower or hand labor, backpack spayer or spray bottle where necessary.		
MATERIALS:	Krenite 1.5-6 gallons/acre	Crossbow 1.25-1.5 gallons/acre		
TIMING:	In the Fall, after berries drop.	After mowing, in the fall.		
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.		
REMARKS:				

Nuisance Weed Control -Common Fennel

	OPTION 1			
TREATMENT TYPE:	Chemical application			
ACTION THRESHOLD:	Wherever present			
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.			
METHOD:	Foliar treatment w/ herbicide			
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.			
MATERIALS:	Escort 1/3 to 1/2 oz./acre			
TIMING:	Apply from rosette to bud stage to actively growing thistle			
IVM FOLLOW-UP:	Repeat annually as necessary			
REMARKS:				

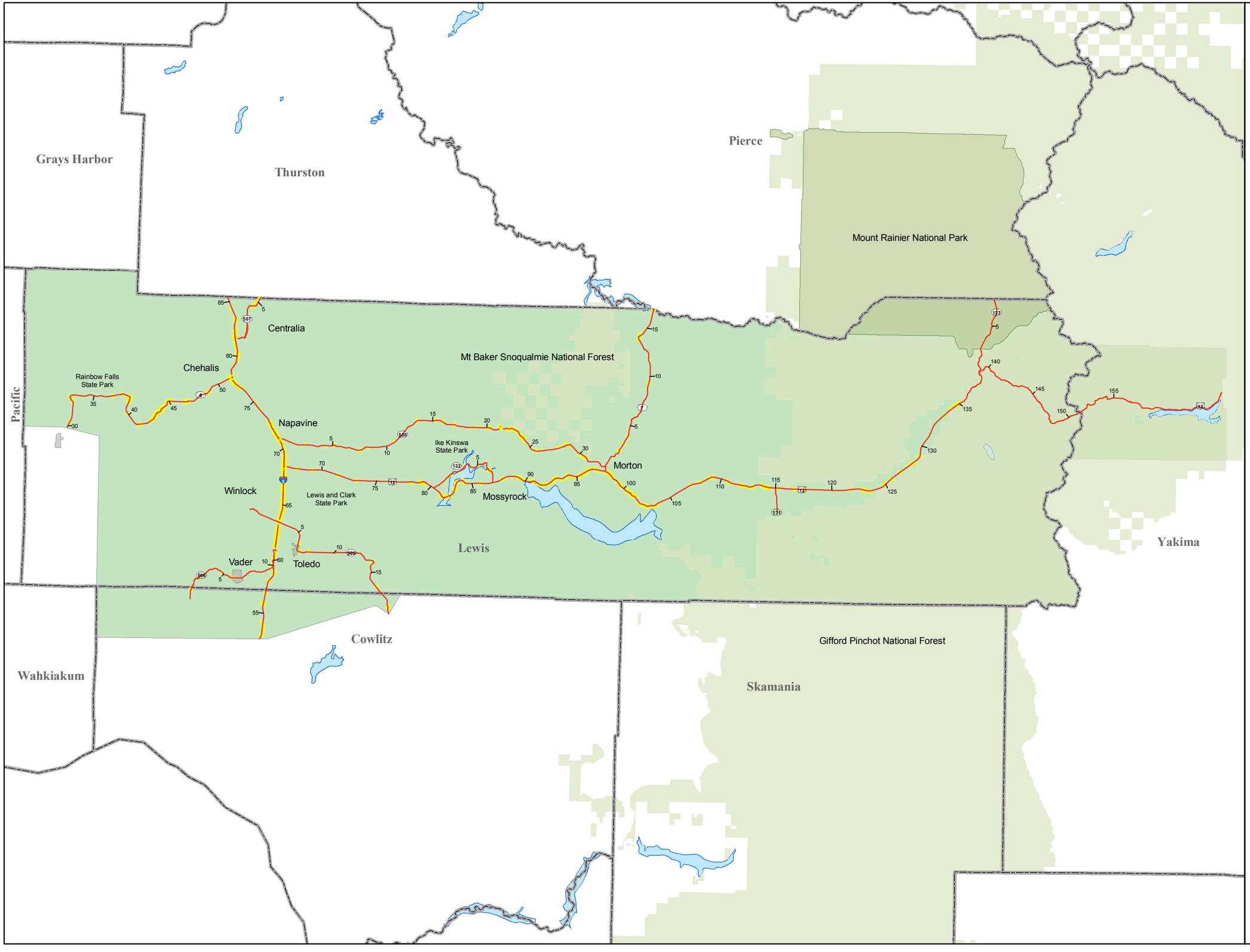
Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:
1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	***Product Name(s)***	***Where Used***	***How/Why Used***	***Notes/Recommendations***	***Restrictions***	***Cautions***
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Bromacil	Krovar 1 DF Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Krovar and Hyvar are premixed with diuron	Westside - Restricted for use Eastside - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on Canadian thistle and horsetail. Landmark is premixed with Oust.	None	None
Clopyralid	Transline Curtail Pathfinder	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr	Curtail and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dicamba	Vanquish Veteran 720	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Vanquish is the dicamba formulation without 2,4-D	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Highly effective for pre-emergent control of unwanted weeds in ornamentals	Restricted for use within 60' of all water	Dichlobenil is highly toxic to aquatic insects
Diflufenzopyr	Overdrive	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Diuron 4 L Diuron 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Cost effective weed control for Zone 1 in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish.
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Second year of use in zone 1, still evaluating	Restricted for use within 60' of all salt water	Highly toxic to estuarine invertebrates
Fluroxypyr	Vista	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	Highly toxic to Eastern Oyster, high surface runoff potential
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	Effective broadleaf tree control without visual impacts	None	None
Glyphosate	Roundup Pro Razor Pro Buccaneer Aquaneat Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective control of all vegetation	Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.	None	None
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases	None	High surface runoff potential, potentially mobile in soil if rain is possible.
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Ronstar	Restricted for use within 60' of all water	High surface runoff potential
Metsulfuron-methyl	Escort XP Metsulfuron Methyl 60 DF	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	Good Zone 1 product but may be difficult to keep in suspension	Restricted for use within 60' of all water	High surface runoff potential
Oryzalin	Oryzalin A.S. Surflan A.S	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Product requires additional rinsing to thoroughly remove residues from empty container	Restricted for use within 60' of all water	Highly toxic to fish
Oxadiazon	Ronstar G Ronstar WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Gallery	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Highly toxic to fish
Pendimethalin	Pendulum 2G Pendulum Aqua	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish, high potential for loss on eroded soil
Picloram	Tordon	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Highly effective for conifer and broadleaf weed control in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly mobile in soil and readily adsorbed through roots of desirable trees
Pyraflufen	Edict	Noxious and nuisance weed control, Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Effective with Roundup for Kochia control	Restricted for use within 60' of all water	Irreversible eye damage, highly toxic to Rainbow Trout
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	New product available for use in 2006	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Zone 1	Nonselective pre/post emergent grass and weed control	Landmark is premixed with Telar	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Triclopyr Amine	Garlon 3A	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	None	None	Irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for invert applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish

Appendix C:

Southwest Region Area 2
Zone 1 Maintenance
Map 1 of 1



Legend

- Zone 1
- State Route
- 75 Mile Post
- City Limits
- County Boundaries
- State Park
- National Park
- National Forest
- Major Lakes
- SW area 2

0 5
Miles

N

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This plan supplements the mapped inventory in describing the limits of routine mowing for limited access highways within Maintenance Area 2 in the Southwest Region. The areas that are routinely mowed are intended to be maintained as permanent grass stands. Any mowing beyond the limits defined in this plan will only occur occasionally on an as needed basis, when planned as part of Integrated Vegetation Management (IVM) treatments for control of weeds and other undesirable brush and trees.

General Guidelines for Annual Mowing Areas

1) Annual routine mowing typically will begin around the first of May starting with urban areas around Centralia and Chehalis and other gateway interchanges then proceed to single pass and/or selective sight distance related mowing as needed on all other routes and interchanges.

2) Designated urban areas and gateway interchanges will receive first priority routine mowing and may be mowed multiple times throughout the growing season depending on budget and equipment availability. The goal in these areas is to maintain a roughly mowed appearance throughout the year. Mowing height in these areas should be set at a minimum of 6 inches.

3) All other non-Zone 1 roadside areas will be mowed one to two times per year in the widths and timing described below. The goal in these areas is traffic safety through improved highway delineation and prevention of vegetation encroachment on traffic operations. Mowing height in these areas should be set as high as possible for effective mowing results but no lower than 6 inches.

4) Mowing steep slopes or wet areas with equipment that may result in tearing or rutting of the grass stand will be avoided at all times. Any area where bare soil is exposed from mowing practices or traffic accidents should be re-seeded with grass the following fall.

5) Whenever mowing around or next to desirable masses of shrubs and/or trees that do not have the potential to impact highway safety, a 3 to 6 ft. buffer will be left when appropriate to allow these plant populations to expand over time.

Gateway Interchanges and Urban Mowing Areas

1) The following gateway interchanges and urban freeway roadsides will be mowed out completely, beginning no earlier than the first of May, from edge of pavement to shrub/tree or fence lines, except where slopes are greater than 2:1 and where low lying areas are too wet in the spring. These areas may be mowed two or more times throughout the spring and summer to maintain a roughly mowed appearance throughout the year.

I-5 – Exit 72, Rush Road

Exit 76, 13th St.

Exit 77, SR-6

Exit 79, Chamber Way

Exit 81, SR-507

Exit 82, Harrison Ave.

Outside shoulders where accessible – MP 72.3 to MP 83.1

2) The following interchanges will be mowed one pass only, beginning no earlier than the first of May, adjacent to edge of pavement, except where slopes are greater than 2:1. The width of mowing pass in these cases is determined by the equipment being used, but is no wider than 25 ft and generally only to the bottom of the ditch line if present. These

areas may be mowed again at some point during the summer as necessary to maintain a roughly mowed perimeter throughout the year.

I-5 – Exit 68, Eastbound SR-12

General Roadside Mowing Areas

1) Road shoulders in all other areas, both outside shoulders and median, will be mowed one time per year one pass width. Any areas to be routinely mowed wider than one pass on outside shoulders are indicated on the mowing map in this appendix. Mowing of these areas will be timed to begin once top growth on grasses has matured and seed heads have developed, but no earlier than the first of June. The goal is to have all general roadside mowing areas completed by the first of August. Width of mowing in areas designated as single pass will be determined by the width of mowing equipment but will be no wider than 25 ft. Outside shoulders adjacent to steep (2:1 or greater) cut slopes will only receive one mowing pass adjacent to pavement and generally to the bottom of the slope. Steep fill slopes behind guardrail will only be mowed if accessible, and otherwise treated with IVM for control of unwanted vegetation.

I-5 – Exit 52, Toutle Park Rd.

Exit 57, Jackson Hwy. Barnes Drive

Exit 59, SR-506

Exit 60, Toledo-Vader Rd.

Exit 63, SR-505

Exit 71, SR-508

Appendix D:

Southwest Region Area 2
Mowing Maintenance
Map 1 of 1

Legend

- Multi Pass
- Single Pass
- State Route
- 75 Mile Post
- City Limits
- County Boundaries
- State Park
- National Park
- National Forest
- Major Lakes
- SW area 2

0 10
Miles

N

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Designated for control in SW area 2:
(Lewis and Yakima County)

Japanese Knotweed/
Polygonum cuspidatum

Tansy Ragwort/
Senecio jacobaea

Knapweed sp./
Centauria sp.

*Scotch Broom/
Cytisus scoparius

Butterly Bush/
Buddleia davidii

Poison Hemlock/
Conium maculatum

*only the very eastern portion of SR 12 and SR 123

Designated for control in SW area 2:
(Lewis and Yakima County)

Yellow Hawkweed/
Hieracium caespitosum

Dalmation Toadflax/
Hieracium caespitosum

Mouseear Hawkweed/
Hieracium pilosella

Rush Skeletonweed/
Chondrilla juncea

Common fennel/
Foeniculum vulgare

Nuisance weeds in SW area 2:
(Lewis and Yakima County)

St. Johnswort/
Hypericum perforatum

Sulfur Cinquefoil/
Potentilla recta

Common Tansy/
Tanacetum vulgare

Bull Thistle/
Cirsium vulgare

Canada Thistle/
Cirsium arvense

Scotch Broom/
Cytisus scoparius

Nuisance weeds species in SW area 2:
(Lewis and Yakima County)

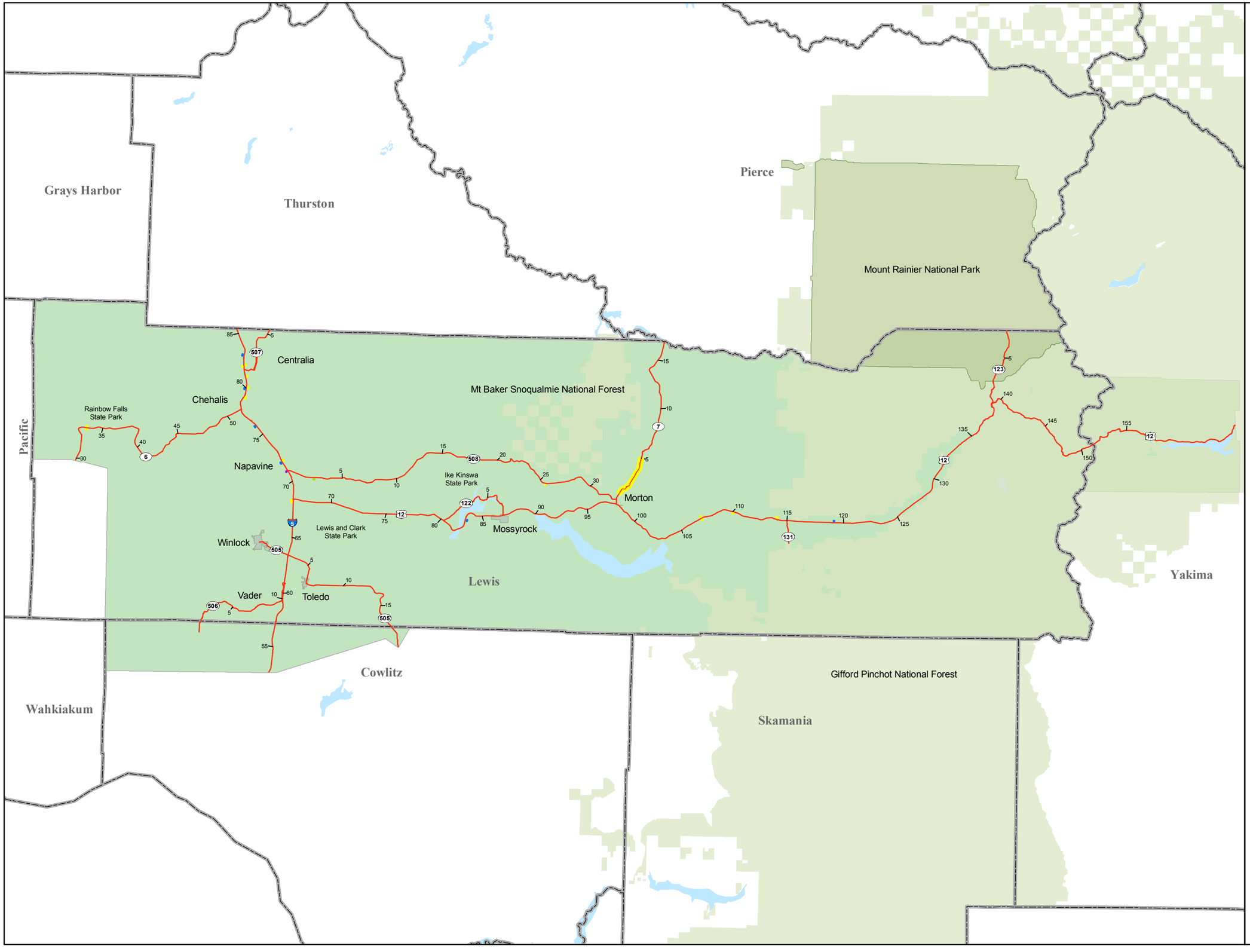
Wild Carrot/
Daucus carota

Mullein/
Verbascum thapsus

Himalayan Blackberry/
Rubus discolor

Appendix E:

Southwest Region Area 2
Noxious Weed Location
Map 1 of 2



Legend

- Commen Fennel
- Dalmation Toadflax
- Knapweed
- Poison Hemlock
- State Route
- 75 Mile Post
- County Boundaries
- State Park
- City Limits
- National Park
- National Forest
- Major Lakes
- SW area 2

0 10
Miles

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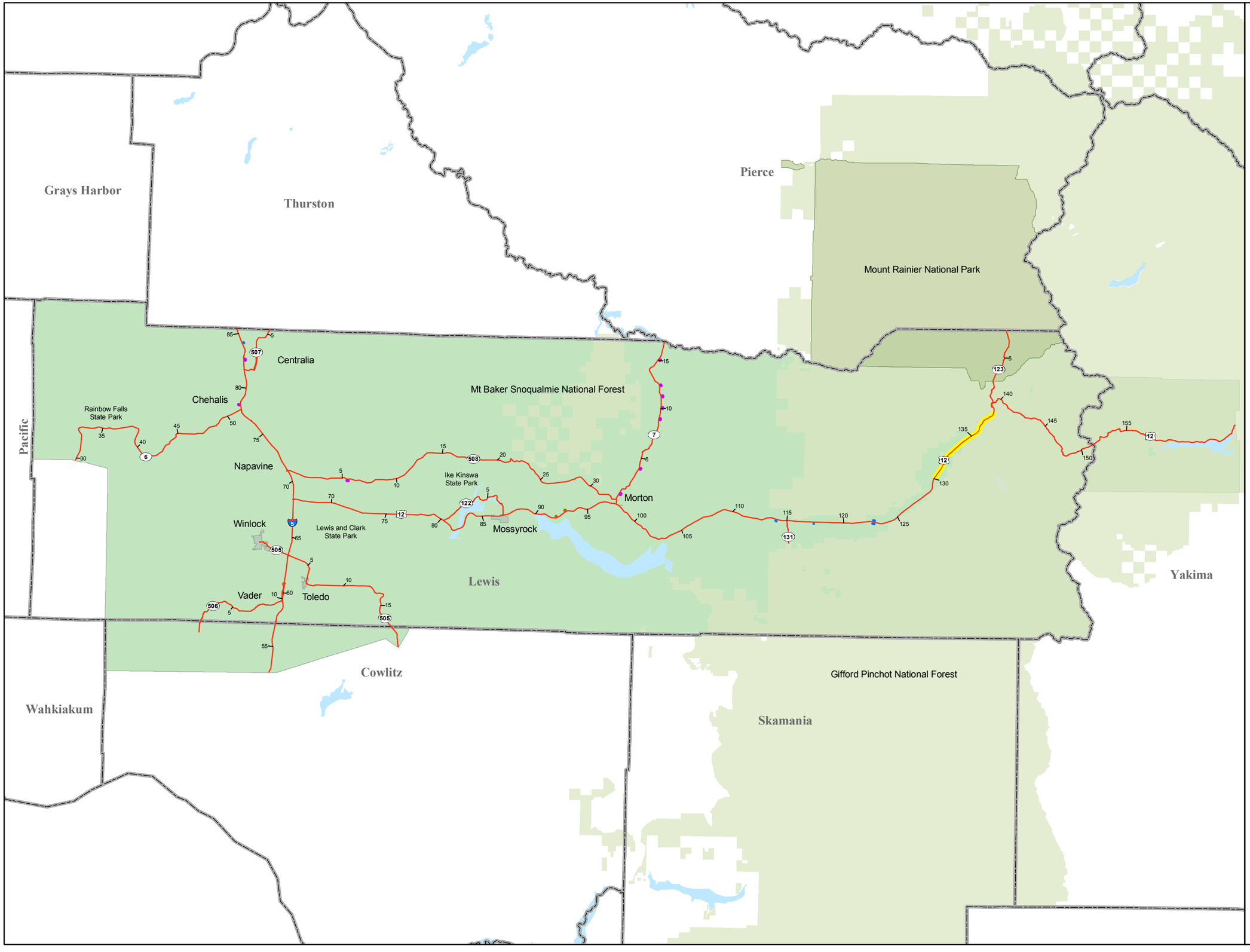
Washington State Department of Transportation

2009

Appendix E:

Southwest Region Area 2
Noxious Weed Location
Map 2 of 2



Legend

- Japanese Knotweed
- Rush Skeletonweed
- Scotch Broom
- Yellow Hawkweed
- State Route
- 75 Mile Post
- County Boundaries
- State Park
- City Limits
- National Park
- National Forest
- Major Lakes
- SW area 2

0 10
Miles

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Washington State Department of Transportation

2009

Appendix F *Special Maintenance Areas*

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
005	INC	RS	52.65	53.02	On ramp from Toutle Park Rd.	
005	INC	RS	54.34	59.90	Toutle Rest Area	
005	INC	RS	57.01	57.90	Exit 57 Jackson Hwy	
005	INC	RS	59.27	59.63	Exit 59 Vader/Ryderwood	
005	INC	RS	60.69	61.39	Exit 60 Toledo Vader Rd.	
005	INC	RS	63.11	63.96	Exit 63 Winlock/Toledo	
005	INC	RS	68.12	68.98	Exit 68 Morton/Yakima	
005	INC	RS	70.67	71.53	Exit 71 Napavine/Onalaska	
005	INC	RS	72.55	73.22	Exit 72 Rush Rd.	
005	INC	RS	73.11	73.12	Wetland Mitigation Site	
005	INC	RS	76.27	77.01	Exit 76 13th St.	
005	INC	RS	77.69	78.35	Exit 77 Pe Ell/Raymond	
005	INC	RS	78.85	79.50	Exit 79 Chamber Way	
005	INC	RS	81.36	82.08	Exit 81 Mellen St.	
005	INC	RS	82.45	83.28	Exit 82 Harrison Ave.	
005	DEC	RS	52.87	52.65	Exit 52 Toutle Park Rd.	
005	DEC	RS	54.93	54.16	Toutle Rest Area	
005	DEC	RS	57.67	56.67	Exit 57 Jackson Hwy.	
005	DEC	RS	59.61	59.17	Exit 59 Vader/Ryderwood	
005	DEC	RS	61.18	60.38	Exit 60 Toledo Vader Rd.	
005	DEC	RS	63.71	62.87	Exit 63 Winlock/Toledo	
005	DEC	RS	68.80	68.13	Exit 68 Morton/Yakima	
005	DEC	RS	71.35	70.83	Exit 71 Napavine/Onalaska	
005	DEC	RS	72.99	72.35	Exit 72 Rush Rd.	
005	DEC	RS	76.77	76.11	Exit 76 13th St.	
005	DEC	RS	78.22	77.52	Exit 77 Pe Ell/Raymond	
005	DEC	RS	79.40	78.54	Exit 79 Chamber Way	
005	DEC	RS	81.92	81.21	Exit 81 Mellen St.	
005	DEC	RS	83.09	82.34	Exit 82 Harrison Ave.	
006	Both	RS	42.46	42.47	RR crossing	
006	Both	RS	46.13	46.14	RR crossing	
006	Both	RS	51.33	51.37	City of Chehalis	
006			36.62		Hope Cr. Stockpile Site	
006			39.5		River Rd. Pit	
006			49.3		Claquato Stockpile	
007	Both	RS	0.00	0.63	City of Morton	Maintain by city
007	Both	RS	0.58	0.59	RR crossing	
007			3.65		Tilton R. Pit	
007			8.8		Summit Cr./Nine Mile Pit	
012	Both	RS	86.63	86.95	City of Mossyrock	Maintain by city
012	Both	RS	97.30	97.50	City of Morton	Maintain by city

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
012	Both	RS	135.15	165.98	National Park	
012			73.2		Ethel Pit	
012			77.78		Salkum Stockpile Site	
012			109.2		Glenoma Stockpile Site	
012			110.6		Kiona Cr. Pit	
012			112.52		Savio Rd. Stockpile Site	
012			123.1		Cora Bridge Stockpile Site	
012			124.05		Bennett Rd. Stockpile Site	
012			130.5		Packwood Pit	
012			131.36		Skate Cr. Rd. Pit	
123	Both	RS	0.00B	7.50	National Park	
505	Both	RS	0.00	1.00	City of Winlock	Maintain by city
505	Both	RS	0.01	0.02	RR crossing	
505	Both	RS	6.16	6.86	City of Toldeo	Maintain by city
506	Both	RS	6.00	6.74	City of Vader	Maintain by city
506	Both	RS	6.07	6.08	RR crossing	
507	Both	RS	0.00	4.25	City of Centralia	Maintain by city
507	Both	RS	0.47	0.48	RR crossing	
507	Both	RS	2.12	2.13	RR crossing	

Washington State Department of Transportation

Integrated Vegetation Management Record

Org Code	County	Date		Vegetation Management Zone(s)
		6/13/2007		☐ Zone 1 ☐ Zone 2 ☐ Zone 3

Area
SR. _____ MP _____ to MP _____ Location

Check Appropriate Boxes: ☐ NB ☐ EB ☐ SB ☐ WB ☐ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Mitigation Site ☐ Stormwater ☐ Yard/Stockpile Third Party Damage ☐ Yes Sensitive Sites ☐ Aquatic ☐ Wetlands

Target ☐ Noxious Weeds ☐ Nuisance Weeds ☐ Brush/Trees ☐ Hazard Tree ☐ Other List Target/Species: _____

Reason for Action:
☐ Noxious Weeds ☐ Nuisance Weeds ☐ Fire Prevention ☐ Restore Native Veg. ☐ Zone 1 Pilot ☐ Aesthetic
☐ Site Distance ☐ Hazard Vegetation ☐ Customer Request ☐ Enhance Vegetation ☐ Slope Stabilization ☐ Other _____

Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)

Approximate Acres to Accomplish

Activities		Planned date of Treatment	Actual date of Treatment
Manual	☐ Digging ☐ Pulling ☐ Planting ☐ Lopping ☐ Scalping ☐ Other _____		
Mechanical	☐ Axial Saw Work ☐ Tractor Brush Cutter ☐ Mower/Chain ☐ Manual Brush Cutting ☐ Tractor Mower ☐ Other		
Bio-Control	☐ Insects ☐ Pathogens ☐ Parasites Type/Species _____		
Cultural	☐ Burning ☐ Grading ☐ Seeding ☐ Fertilizing ☐ Grazing ☐ Soil Amendment ☐ Other _____		
Chemical	Record Number		

#1 Evaluation and Date

#2 Evaluation and Date

#3 Evaluation and Date

Washington State Department of Transportation

Pesticide Application

Org. Code	County	Date of Application	Start / Finish	ICP	Stores Issue Ticket Number(s)
		6/13/2007	○ AM ○ PM / ○ AM ○ PM		

Area
SR ____ MP ____ to MP ____ and MP ____ to MP ____ and MP ____ to MP ____ and MP ____ to MP ____

Check Appropriate Boxes:
☐ NB ☐ EB ☐ SB ☐ WB
☐ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Yard/Stockpile
☐ Spot Spray ☐ Blanket Spray
☐ Aquatic ☐ Wetlands

☐ Weeds ☐ Noxious Weeds ☐ Disease ☐ Brush ☐ Insects ☐ Other
Zone 1 ○ yes ○ no
List Pest(s):

Start Weather Conditions
Temperature ____ °F (°C) Wind (Direction From) ____ Wind (Range) ____ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Finish Weather Conditions
Temperature ____ °F (°C) Wind (Direction From) ____ Wind (Range) ____ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product Per Acre (hectare)	Unit	Total Daily Usage	Unit

Total ____ **Acres(hectares) Treated at** ____ **gallons(liters) of spray per acre(hectare).**

Equipment Number	Tank Size 1	2	3	4	5	Calibration Date	Vehicle Speed mph(km/h)	Nozzle Pressure PSI(kPa)	Width of Spray Pattern Feet(meter)

☐ Hand/spreader ☐ Backpack ☐ Hand gun ☐ Fixed Nozzle ☐ Boom ☐ Other (Specify) ____
☐ Tank Mix (Conc.) ☐ Injection ☐ Invert

Operator Name	Operator Pesticide License No.	Operator Signature	Driver Name

Remarks

Buffer Area Driver's Name

Pesticide Sensitivity Registration Applies: ☐ Yes ☐ No

Contact

Division of Emergency Management (1-800-258-5990) Additional Notes

DOT Form 540-506 EF Revised 1/2007 Distribution: O/C Maint. Operator Region File
Send OSC Copy Within 5 Days

Oz= Ounces Dry Lb= Pound
Oz= Ounces Liquid Ga= Gallon
Pt= Pint Qt= Quart
g= gram kg=kilogram
ml=Milliliter L= Liter

Entity	Mailing Address	Contact Person	Title	Phone	E-Mail
City of Centralia	1100 No. Tower Centralia, WA 98531	Jan Stemkoski	City Engineer	(360) 330-7512	jstemkoski@cityofcentralia.com
City of Chehalis	2007 N.E. Kresky Ave. Chehalis, WA 98532	Tim Grochowski	Public Works Director	(360) 748-0238 Fax: (360) 748-0694	jsmith@ci.chehalis.wa.us
City of Napavine	214 NE Second Napavine, WA 98565	Steve Ashley	Public Works Director	(360) 262-9231 Fax: (360) 262-9885	
City of Winlock	323 NE First St Winlock, WA 98596	LeRoy A. Zwiefelhofer	Public Works Superintendent	(360) 785-3811 Fax: (360) 785-4378	wincity@toledotel.com
City of Vader	317 8th St Vader, WA 98593	Guy Chastain	Major	(360) 295-3222 Fax: (360) 295-3012	vader@toledotel.com
City of Toledo	130 N Second St Toledo, WA 98591	Michelle Whitten	City Manager	(360) 864-4564 Fax: (360) 864-4566	cityoftoledo@toledotel.com
City of Mossyrock	231 E State St Mossyrock, WA 98564	James Fike	Major	(360) 983-3300 Fax: (360) 983-8910	mossyrock@lewiscounty.com
City of Morton	250 Main St Morton, WA 98356	Dan Powell	Public Work Superintendent	(360) 496-6881 Fax: (360) 496-6899	
Lewis County	351 NW North St. Chehalis, WA 98532	Bill Wamsley	Noxious Weed Coordinator	(360) 740-1215 Fax: (360) 740-2792	wamsleyb@wsu.edu
Yakima County	1216 E. Race St. Yakima, WA 98901	Dick Jacobson	Noxious Weed Coordinator	(509) 574-2180 Fax: (509) 457-7633	effie.shinn@co.yakima.wa.us
Cowlitz County	207 4th Ave. N. rm #101 Kelso, WA 98626	Kenneth C. Stone	Noxious Weed Coordinator	(360) 577-3030 Fax: (360) 636-0845	stonek@co.cowlitz.wa.us
Gifford Pinchot National Forest	10600 N.E. 51st. Circle Vancouver, WA 98682			(360) 891-5000 Fax: (360) 891-5045	